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ABSTRACT

A 2-year-project with 48 disadvantaged (D) and 48 middle class (P) Israeli 2-year-olds was set up to study how heterogeneous or homogeneous grouping influences social interaction. Twenty-four D's were the homogeneous group, 48 P's and 24 D's were equally divided into three heterogeneous groups with a ratio of 2:1. This report is based on an analysis of narrative records of subjects during 1-hour free play observations. The records were first divided into Social Interaction Units (SIU's). SIU's were then classified into seven categories, and the percentage of SIU's of each child in any one of the categories and with any type of possible interactee (adult, D child, P child) computed. The overall amount of social interactions increased more for the heterogeneous D's than for the homogeneous D's. However, both heterogeneous D's as well as P's interacted more within their own group than with each other, despite the 2:1 ratio of P's to D's in each group which should have favored interaction with P's by the heterogeneous D's. Moreover, the homogeneous D's (like the P's) developed a better ability to cooperate with peers while the heterogeneous D's remained very dependent on adults. (Author)

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SOCIAL INTERACTION IN HETEROGENEOUS PRE-SCHOOLS IN ISRAEL[1]

by

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Problem

While the heterogeneous grouping of culturally disadvantaged with privileged children has been a commonly proposed educational technique for improving school performance, only a small number of studies deals with the pre-school age. Moreover, because the emphasis has been mainly on achievement the social dynamics inherent in this method of grouping have received less attention.

The present research was designed to contribute to a better understanding of the social forces activated in a heterogeneous pre-school setting by studying the way in which heterogeneous or homogeneous grouping influences the social interactions of disadvantaged children with peers and with adults.

This study is an outcome of a two-year project with culturally disadvantaged and middle-class Israeli pre-school children.

Methodology

The Ss were 96 3-year-old children, half of them disadvantaged and half privileged. Forty-eight disadvantaged Ss (the D group) were selected from a family health center in Jerusalem according to the following criteria:

1) Both parents of Middle Eastern origin.

2) Neither parent received more than an elementary education (8 years)

3) The provider is in a semi-skilled or unskilled occupation.

The criteria for selecting the privileged Ss (the P group) were:

1) Parents of Western or European origin.

2) Both parents completed their secondary education (12 years)

and at least one studied beyond secondary level.

3) The provider is in the professions or is self-employed.

The Ss were divided among four experimental pre-schools where they remained for 2 years.

Half of the D children were placed together as a homogeneous group in one school while the remaining 24 D children were divided equally among three other schools. The 48 P children were also equally divided among these three schools. The ratio of D to P children in each of the three heterogeneous schools was thus 1:2.

The teachers were rotated among the four schools at the end of the first year of the project to minimize the effects of individual differences among teachers.

The findings reported here are confined to a one-hour free play observation conducted on each child in both the first and last 3 months of the project.[3] Detailed narrative records were kept during these observations and subsequently analyzed for social interactions. Each narrative record was divided into Social Interaction Units (SIU's) with SIU defined as a single verbal or non-verbal interaction between the observed child and any other person. The SIU's were further classified into seven categories: 1) cooperation, 2) contact, 3) seeking vicinity of, 4) looking at or listening to, 5) ignoring, 6) rejection, 7) display of aggression. A differentiation was made between an SIU initiated by S, and an SIU involving S but initiated by another person. A reliability of 96% was achieved in training sessions preceding analysis of the observational records.

Results [4]

Table I compares the average number of interactions obtained in the first and last observations for the three main groups of children (D Ss in the homogeneous school, D Ss in the heterogeneous schools, and P Ss in the heterogeneous schools).

A two-way analysis of variance with repeated measurement on the same subjects showed that there were very significant differences ($F = 34.9$) between the three groups, and very significant differences between the first and last observations ($F = 26.9$). It was also noted that there was no significant interaction between the groups on the two observations. The Newman-Keuls method was used for the comparison between groups, and within a group between the first and last observations.

As shown in Table I, the P's started with the greatest average number

Table 1 here

of SIU's and had a significantly greater increase in SIU's than the other two groups ($p \leq .05$). The D's in the three heterogeneous schools had a significantly greater amount of social interaction ($p \leq .05$) than did the D's in the homogeneous school both in the first and last observations. Although this group also had a large increase in SIU's, their increase is significantly smaller than that of the P's ($p \leq .05$). The D's in the homogeneous school had the smallest initial amount of SIU's ($p \leq .05$) and the slightest but still significant increase of the three groups ($p \leq .05$).

We shall now turn to a more precise analysis of the nature of the SIU's. For this analysis the percentage of SIU's of each child in every one of the seven categories (cooperation, contact, etc.) and in relation to each type of interactee (D child, P child and adult - A) was

computed. Tables 2 and 3 compare the average percentage of SIU's in the

Tables 2 and 3 here

different categories, obtained in the first and last series of observations respectively.

Tables 2 and 3 reveal interesting parallels in interaction patterns of the different groups of Ss. While in the first series of observations homogeneously grouped D's interacted about equally with peers and with adults, by the last series of observations, interactions with adults had gone down to 33.1% of their total SIU's.

A similar decrease in interactions with adults occurred in the P group (from 51% in the first series of observations to 28.3% in the last). Both in the first as well as in the last series of observations, interactions of P's with peers were confined mainly to their own social group. Even in their negative social responses (ignoring, rejection, and display of aggression) they tended to stay within their own social milieu.

Similarly, the D's in the heterogeneous schools interacted mainly within their own group, even though twice as many P Ss were available to them to interact with than children of their own group. This pattern tended to maintain itself although there was an increase in interactions with P's over the 2 years of the project (from 16% of all SIU's in the first series of observations to 23.2% by the last). Moreover, in contrast to the other two groups, SIU's with adults made up more than half of their total SIU's also in the last series of observations. We shall comment on this finding when discussing cooperation patterns in the three groups of Ss.

Another somewhat surprising finding was that more aggression was displayed by the homogeneously grouped D's than either of the other two groups both at the beginning and at the end of the project, while the heterogeneously grouped D's displayed exceedingly little aggression in the first series of observations and only a slight increase on this category by the end of 2 years.

As shown in Figure 1, the similarity between homogeneous D's and P's and the difference between the two groups of D's seems even

Figure 1 here

more pronounced in the category of cooperation. For both homogeneous D's as well as P's, cooperation with peers is about 15% of their SIU's at the first observation. In both groups this percentage increases to slightly more than 40% by the last observation. For the hererogeneous D's, however, cooperation with peers is only 23% of their total SIU's at the last observation. Furthermore, even at this time cooperation with P's is still only 8.7% of their total SIU's. The teachers seem to have been aware of this situation and to have made an effort to compensate for it as is evident from the high percentage of cooperation with adults --34.5% (versus 16.6% for the homogeneous D's and 17.9% for the P's). Early results of a content analysis of the final observational records of heterogeneously grouped D's seem to bear out this impression.

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Discussion

The keynote of the findings in this study is the emergence of conflicting tendencies. On the one hand, P Ss had a significantly

higher average number of SIU's than D Ss already at the first observation. Moreover, by the last observation their average number of SIU's had increased significantly more than that of the D's. One is therefore inclined to assume that the fact that the heterogeneously grouped D's increased more on number of SIU's than the homogeneous group indicates that they had the more stimulating environment.

On the other hand a more detailed analysis of the nature of SIU's in the three groups of children showed that while both the P's and the homogeneously grouped D's increased greatly in their ability to cooperate effectively with peers, and became less dependent on adults, this process was not achieved by the heterogeneously grouped D's, who cooperated also at the end of the project significantly more with adults than with peers. Moreover, despite the fact that twice as many P's were available to them to interact with than children of their own group, interaction with P's even by the end of the project made up less than a quarter of their total interactions. Furthermore, there is some tendency for interaction with P's to be of a passive type, that is, watching them, while active cooperative play was achieved relatively rarely.

It has to be remembered that while the ability to sustain mutual play with peers is certainly one of the aims of a pre-school experience, it is not the only one. Moveover, a paucity of social interactions during one type of activity--in this case the indoor free play period--should not be taken to imply that there was little contact also during other activities or that no learning was taking place. It might well be that D children ingest knowledge while observing P's at play, even when they do not participate actively themselves. Knowledge of this kind could

then be put to use within their own group, especially when the other members of it had also been exposed to similar experiences. Actually the narrative records do reveal instances in which play of P children was later imitated by D's.

It would be well to remember that the findings reported here are confined to only one aspect of a small-scale study which was moreover carried out under a set of special conditions. Further intensive work on the social aspects of different types of pre-school intervention programs seems urgently called for.

Footnotes and Acknowledgements

1. We are indebted to Dr. Marion Blank for her good counsel and unstinting help throughout the preparation of this report.

2. The senior author is Visiting Research Fellow at Harvard University during the academic year 1970-71.

3. Other aspects of the project will be covered in later reports.

4. Six D Ss (three each in two of the het. schools) were lost by attrition during the project. P children who left were replaced by other P's in order to retain the 1:2 planned ratio of D to P children; however, only Ss who stayed in the project for the entire period are reported here.

Table 1

Average Number of SIU's in First and Last Observations

	D hom	D het	P
First Observation	84.2	126.9	139.6
	N=17*	N=17	N=17
Last Observation	101.0	174.7	206.0
	N=17	N=17	N=17

* For the two-way analysis of variance with repeated measurements the number of Ss in all groups had to be equated. The Ss included in the above analysis were randomly chosen from among those who were in the project for the entire period.

Table 2: Comparison of average percent of SIU's, first series

	D's in Hom. school		D's in Het. Schools			P's in Het. Schools		
	with D	with A	with D	with P	with A	with D	with P	with A
1. Cooperation	15.0	22.7	7.4	3.9	30.0	1.6	13.6	26.7
2. Contact	8.5	7.7	6.0	4.1	15.0	4.5	8.4	13.2
3. Seeking vicinity of	12.3	5.9	2.1	1.3	3.0	1.1	3.5	3.1
4. Looking at or listening to	4.3	.7	1.9	4.6	11.3	2.2	3.9	5.3
5. Ignoring	2.9	1.9	1.7	1.8	1.4	1.6	2.7	2.0
6. Rejection	3.4	1.5	1.7	.9	.7	.7	2.5	.7
7. Display of aggression	4.4	0	.2	.4	0	.8	1.9	0
Total	50.8	49.4	21.0	16.0	61.4	12.5	36.5	51.0

Table 3: Comparison of average percent of SIU's, last series

	D's in Hom. School		D's in Het. Schools			P's in Het. Schools		
	with D	with A	with D	with P	with A	with D	with P	with A
1. Cooperation	40.8	16.6	14.3	8.7	34.5	7.1	33.0	17.9
2. Contact	3.9	3.1	2.1	2.2	3.7	1.8	5.3	2.7
3. Seeking vicinity of	7.0	2.5	5.0	3.8	3.2	1.6	9.2	1.6
4. Looking at or listening to	6.6	9.5	2.2	5.7	8.1	2.2	3.9	5.3
5. Ignoring	1.1	.5	.5	.8	1.8	.7	1.6	.5
6. Rejection	3.6	.9	.6	.9	.8	1.1	2.5	.3
7. Display of aggression	3.0	0	.3	1.1	0	.2	1.6	0
Total	66.9	33.1	25.0	23.2	52.1	14.7	57.1	28.3

Figure I. Changes in cooperation patterns

——— Cooperation with D's
– – – – Cooperation with adults
—·—·— Cooperation with P's